Apr 4th, 1:00 PM - 1:15 PM

Association between Alzheimer's disease and Rural Northeast Tennessee Region between 2013 and 2015

Sylvester Olubolu Orimaye
East Tennessee State University

Jodi Southerland
East Tennessee State University

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Sylvester Olubolu ORIMAYE, PhD

orimaye@etsu.edu

Department of Biostatistics and Epidemiology
College of Public Health
East Tennessee State University

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Background

Sixth leading cause of mortality in the U.S, High mortality in Southeast U.S and Northeast Tennessee.

Legend:
- 36.3–123.7
- 29.5–36.2
- 24.3–29.4
- 19.3–24.2
- 4.3–19.2
- Data not available
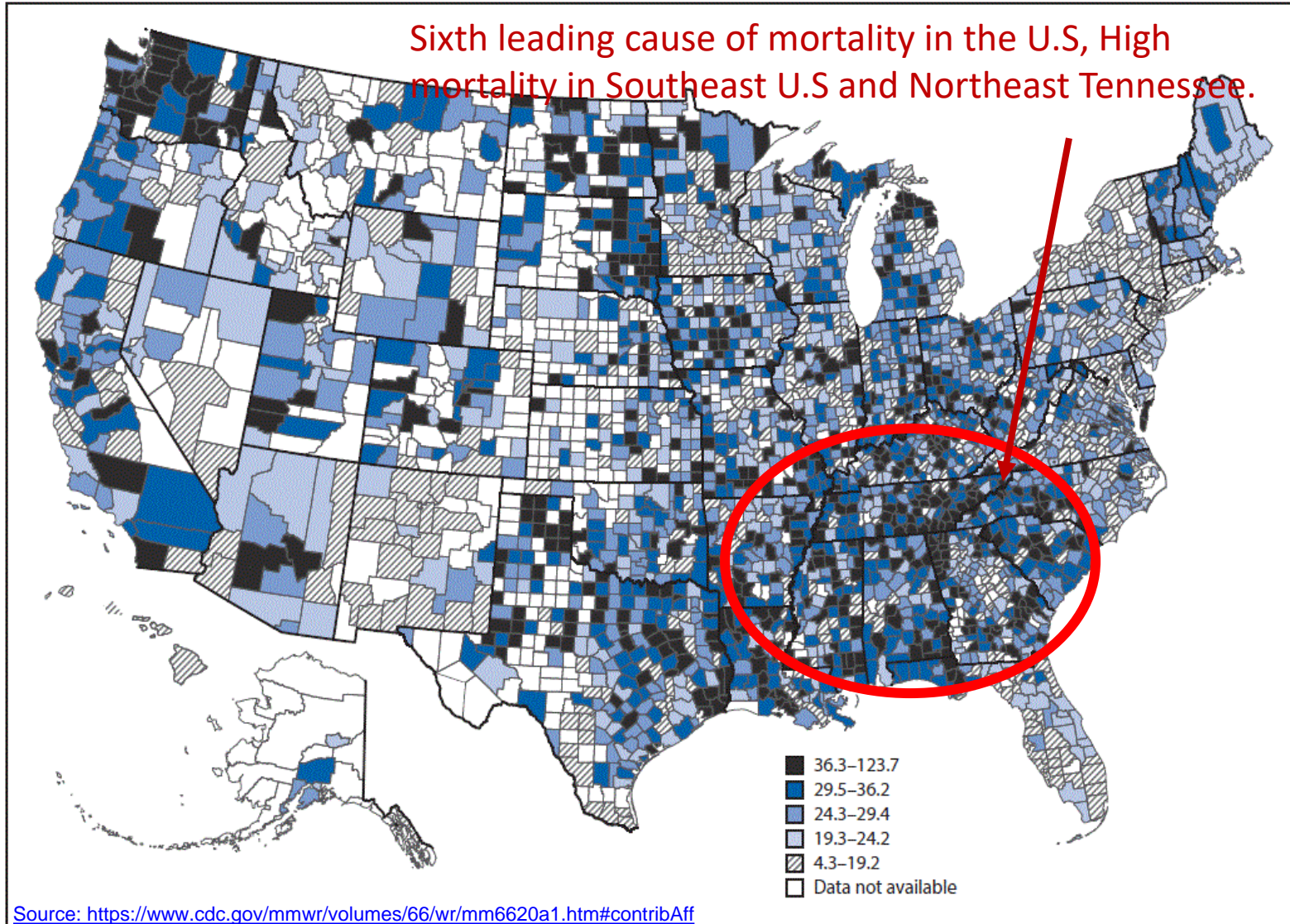
Average annual age-adjusted death rates from Alzheimer's disease per 100,000 populations, by county — United States, 2005–2014

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Background (contd.)
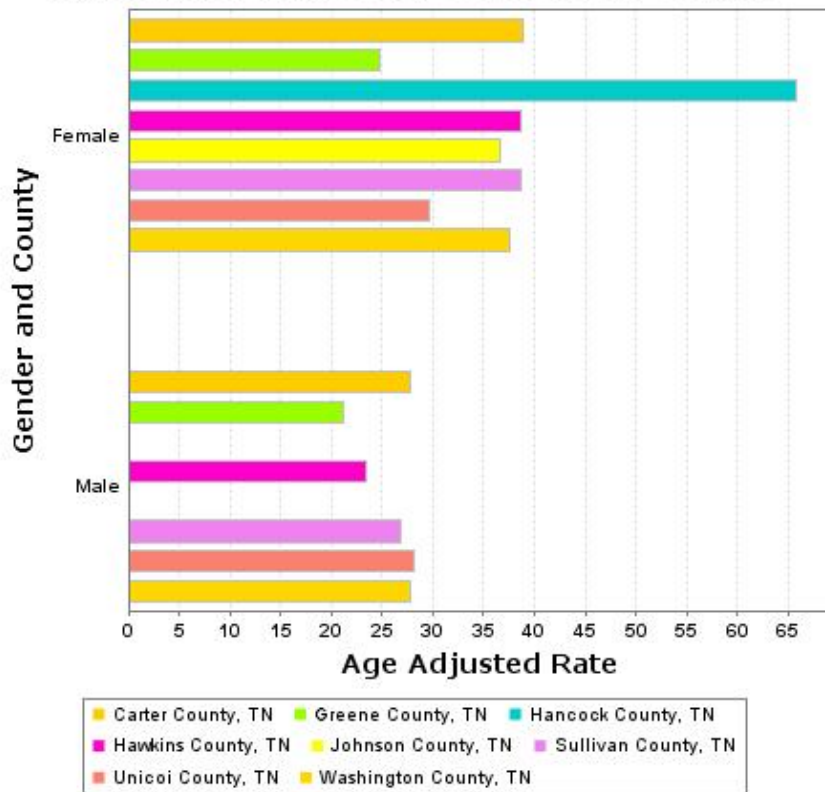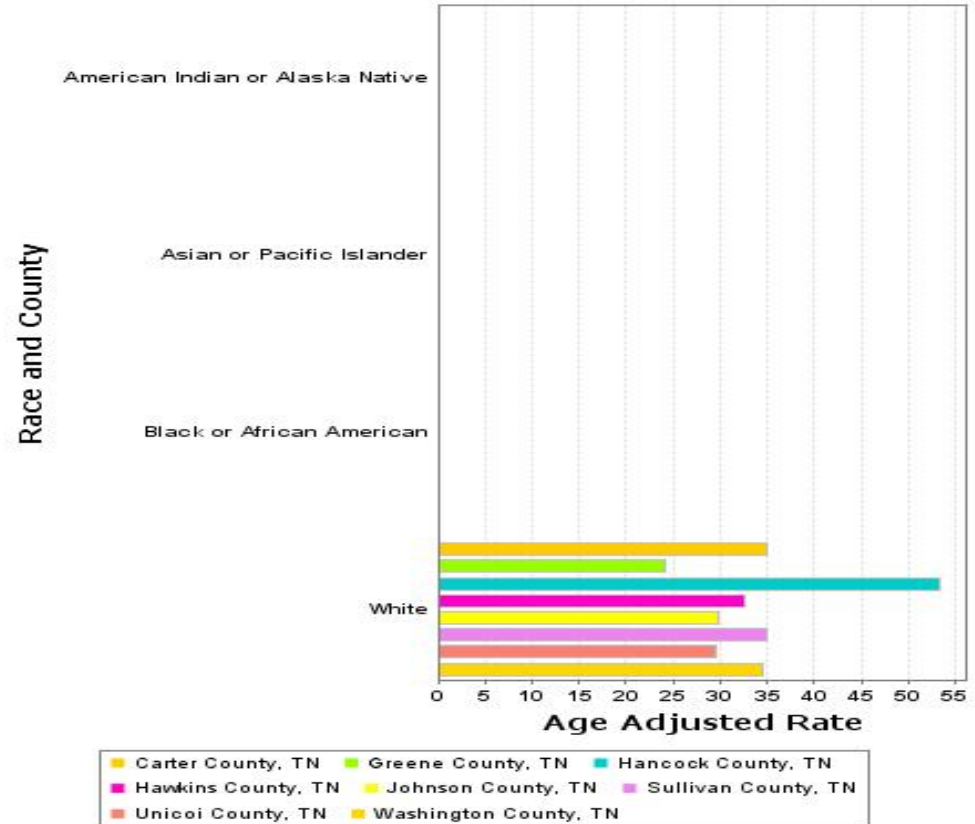
Age-Adjusted Mortality Rate by Gender and Race in Northeast Tennessee. The data for other races are suppressed by the CDC chart generator.

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Purpose

- We examined the **association** between **Alzheimer's Disease (AD)** and the **Northeast Tennessee** counties compared to **other** counties in Tennessee using **Prevalence Odds Ratio (POR)**.

    – *The POR gives an unbiased estimate of the incidence rate ratio* (Pearce, 2004).

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Methodology

- Cross-sectional study & Data source triangulation
- Compares POR of rural versus urban counties
  - Rural vs. Urban counties in Northeast Tennessee
  - Northeast Tennessee region vs. other counties in Tennessee.
  - **RUCC** code 1-5 (Urban > 20,000 population); 6-9 (Rural < 20000 population)
- Sample
  - Centers for Medicare and Medicaid Services (CMS) Geographic Variation Public Use File on Alzheimer's Disease (2013-2015)
  - Quantitative survey of experts' observations about AD within the Northeast Tennessee region.

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Results & Discussion

Table 1: Prevalence Odds Ratio **Rural vs. Urban counties** in **Northeast Tennessee region** from 2013-2015

Year	POR	95% Confidence Interval	
		Lower	Upper
2013	1.183 ⬆	1.113	1.258
2014	1.047 ⬇	0.982	1.117
2015	1.190 ⬆	1.121	1.264

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Results & Discussion

Table 2: Prevalence Odds Ratio **Northeast region counties** vs. **other counties in Tennessee** from 2013-2015

Year	POR	95% Confidence Interval	
		Lower	Upper
2013	1.227 ⬇	1.203	1.250
2014	1.225 ⬇	1.202	1.249
2015	1.212 ⬇	1.189	1.235

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Results & Discussion

Survey: Expert and Professionals observations

ANSWER CHOICES	RESPONSES	
Healthcare	43.59%	17
College/University	2.56%	1
Hospital	0.00%	0
Skilled Nursing Facility	5.13%	2
Private Practice	0.00%	0
Dementia Homecare Center	2.56%	1
Client Homes	12.82%	5
Agency	15.38%	6
Others	17.95%	7
TOTAL		39

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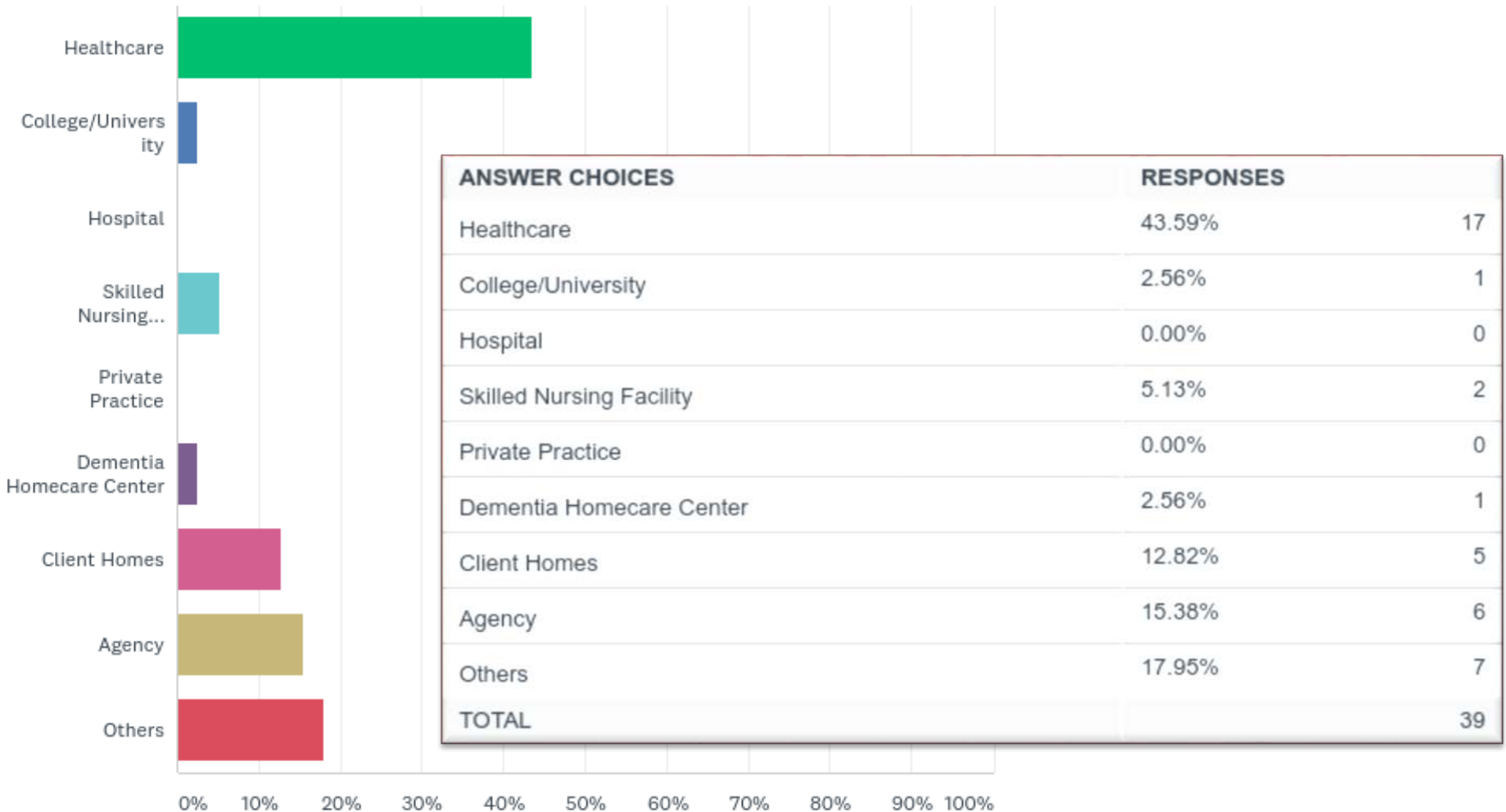
Survey: formal training in Alzheimer's disease research/practice?
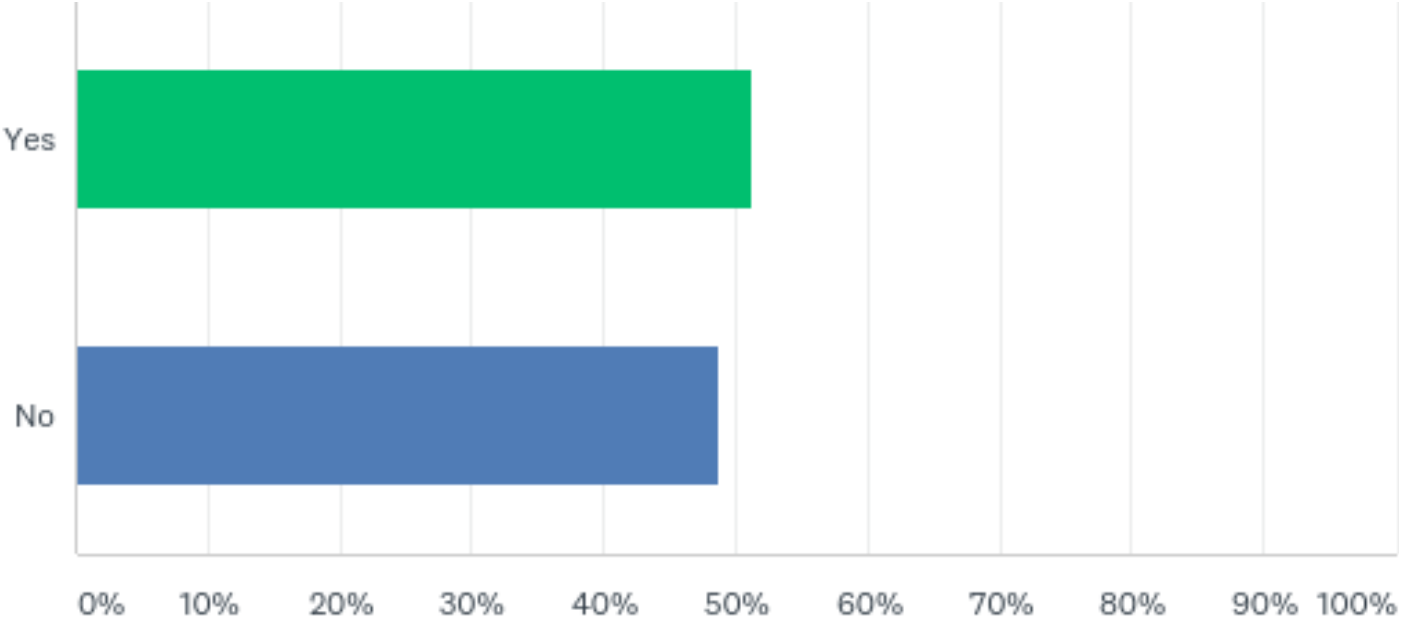
ANSWER CHOICES	RESPONSES	
Yes	51.28%	20
No	48.72%	19
TOTAL		39

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Survey: How often do you work with AD individuals or family members of individuals with Alzheimer's disease?

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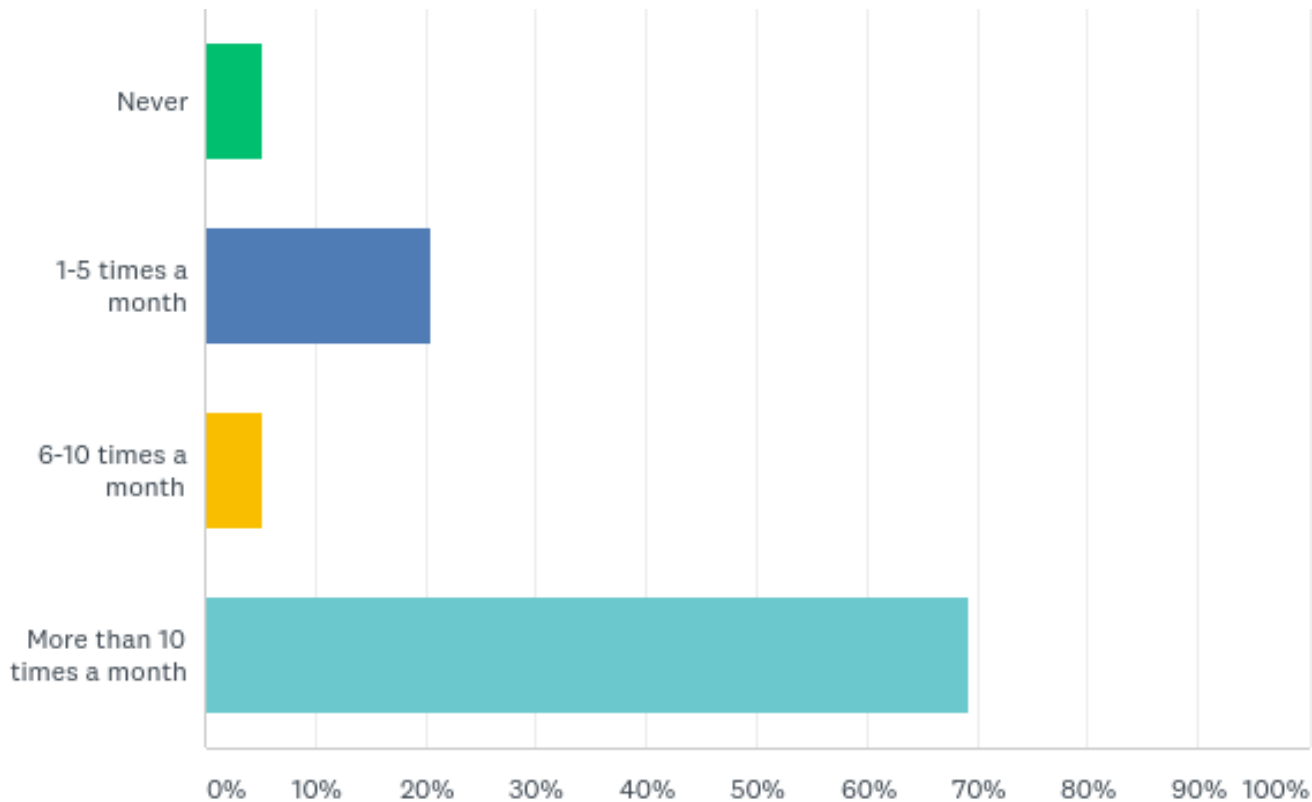
Survey: Compared to five years ago, I currently work with more individuals with AD or family members of individuals with AD.

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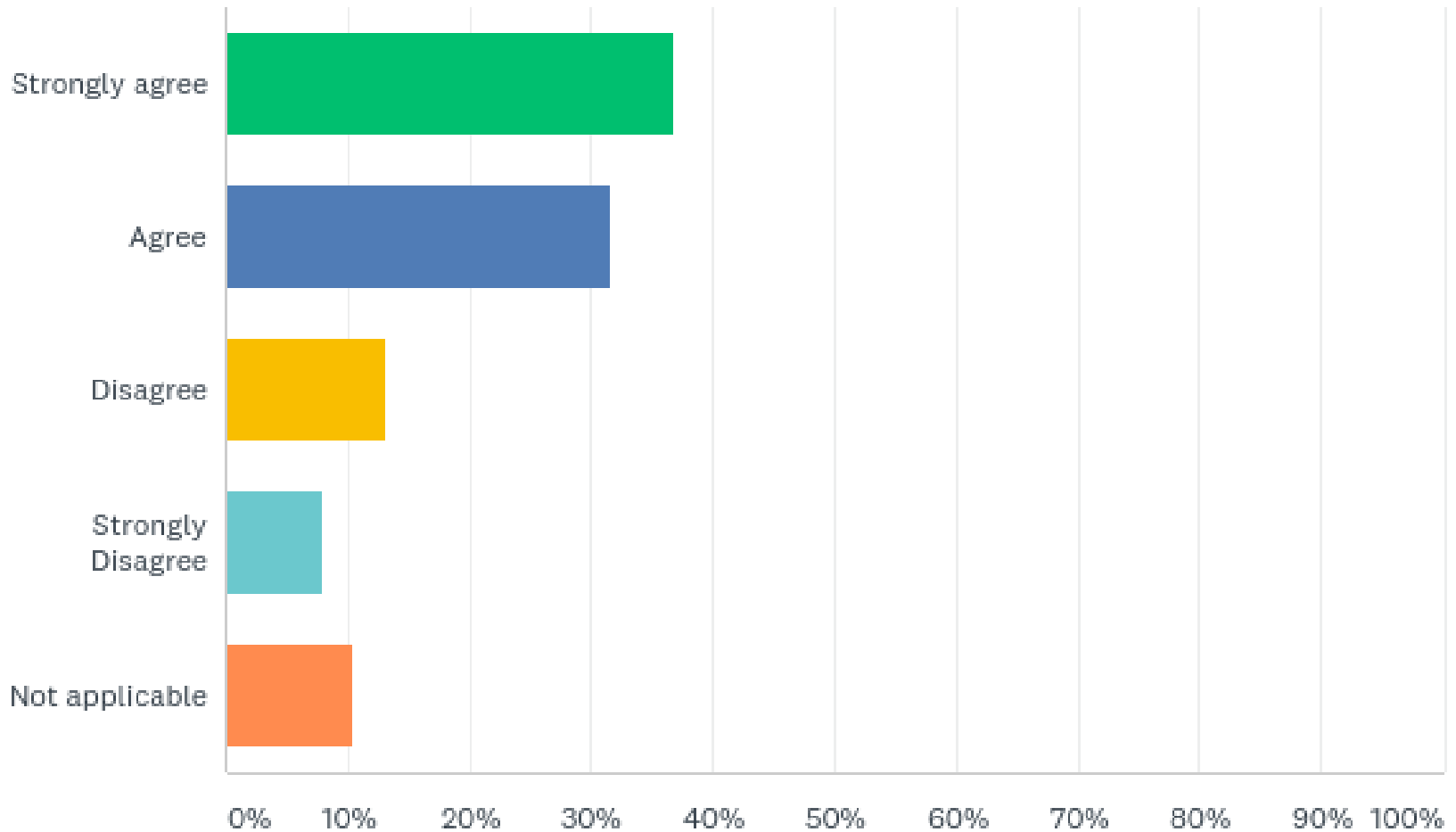
Survey: Compared to five years ago, the Northeast Tennessee region has a higher number of late stage diagnosis of AD compared to early stage diagnosis.

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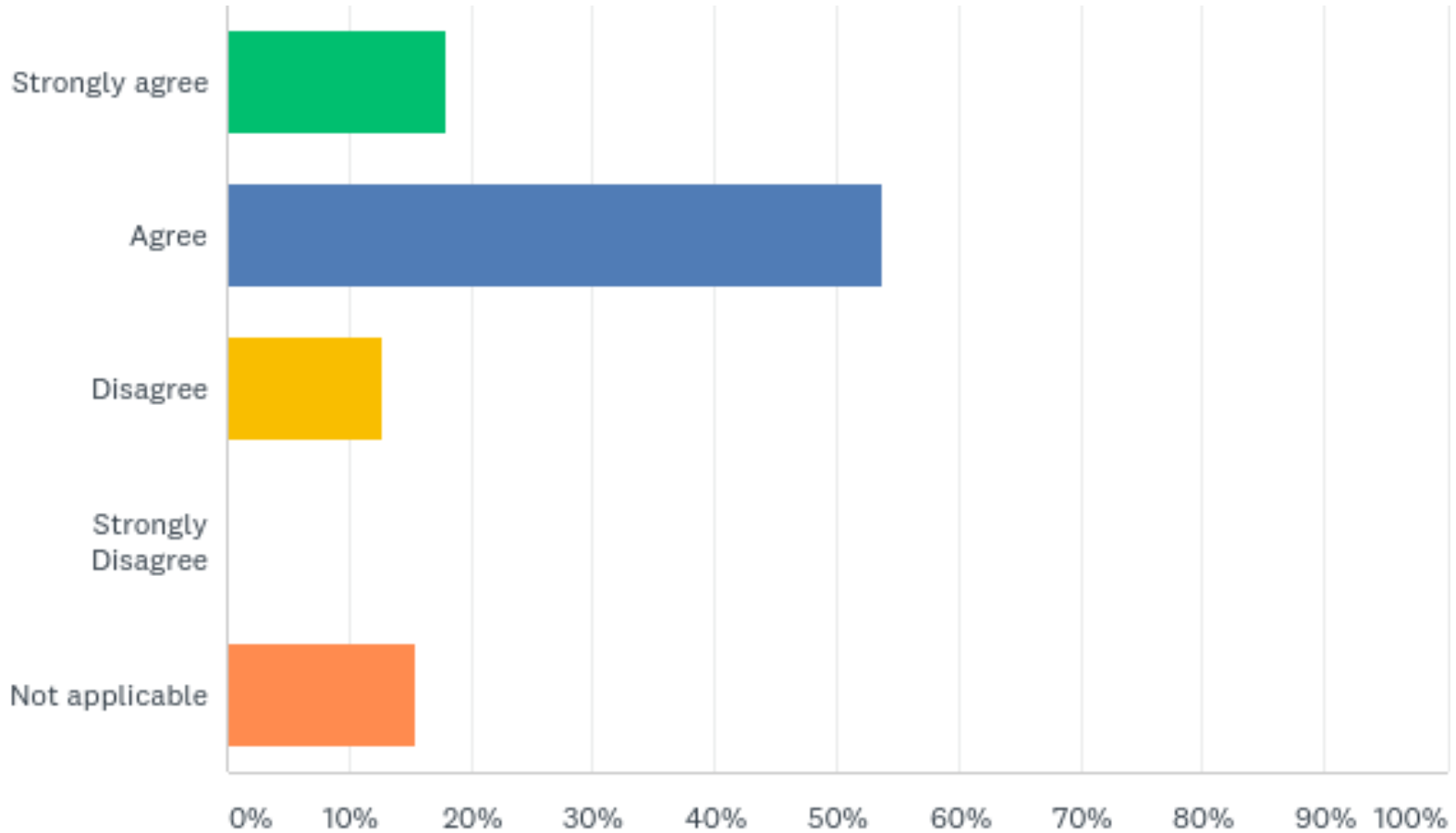
Survey: Early screening or diagnosis could prolong the lives of people living with Alzheimer's disease.

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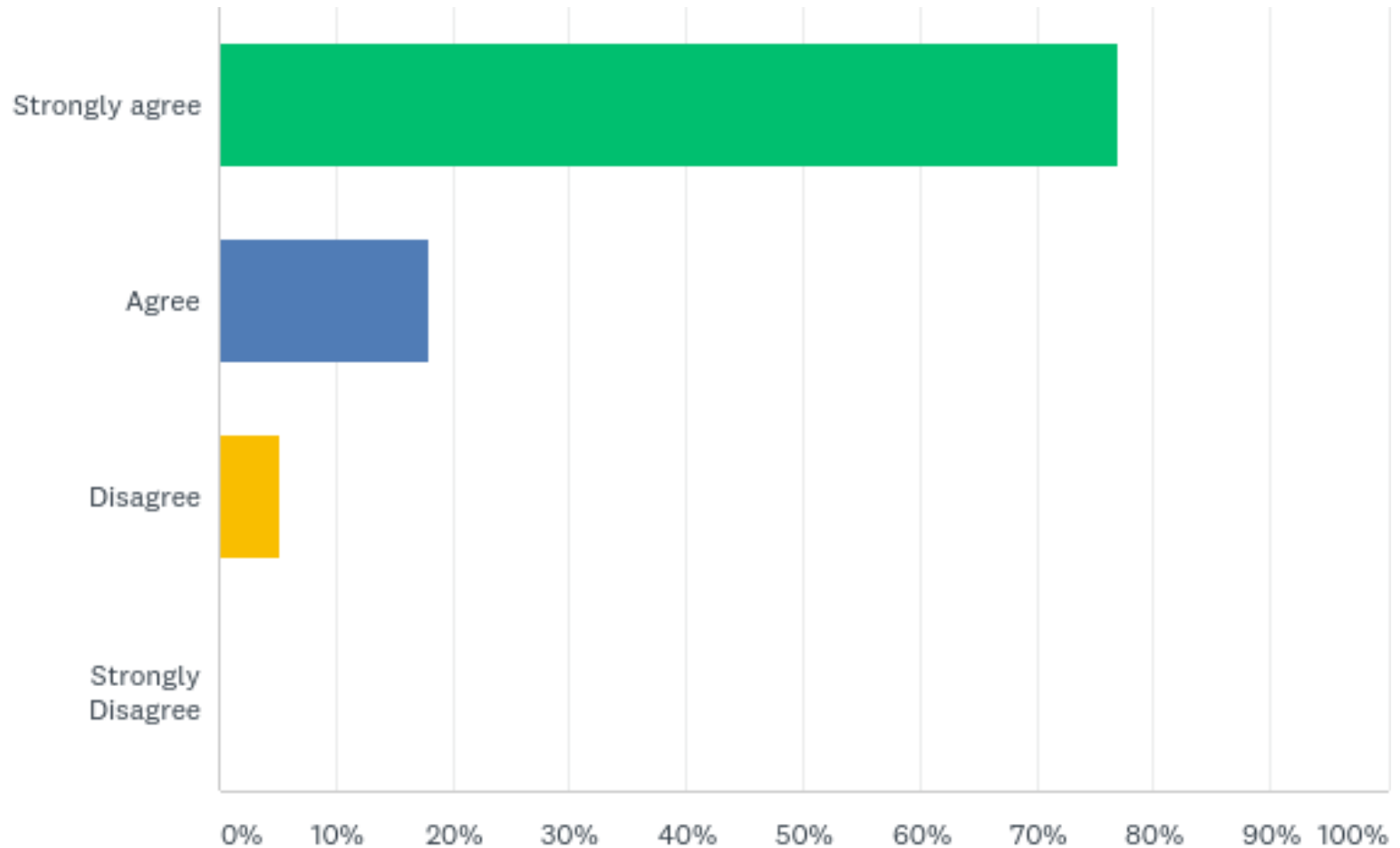
Survey: I regularly hear about screening for Alzheimer's disease in my community.

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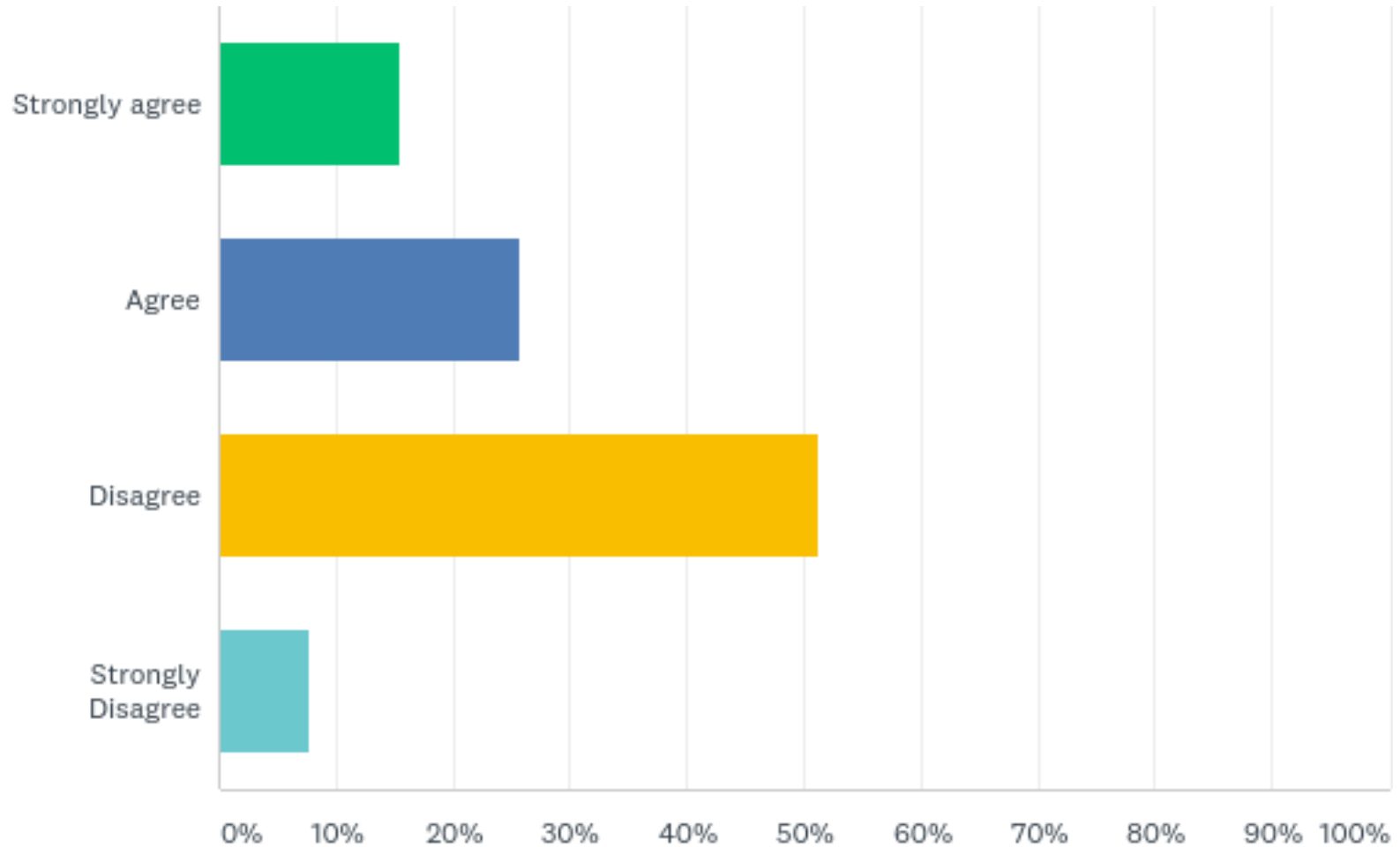
Survey: I know someone or families who have talked about the positive impact of early intervention for a family member living with Alzheimer's disease.

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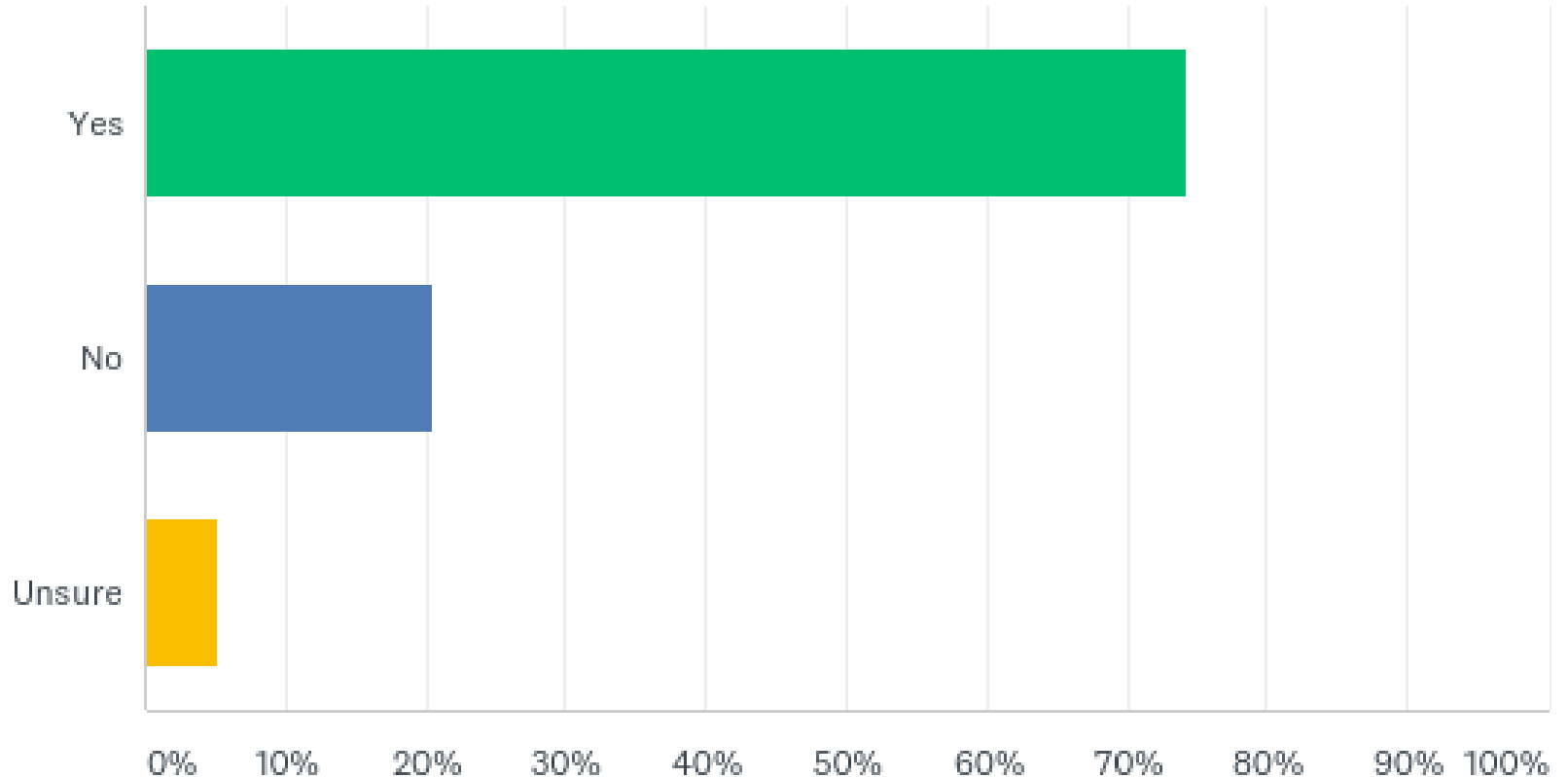
Survey: Select the top three (3) barriers to early diagnosis of Alzheimer's disease in our region.

ANSWER CHOICES	RESPONSES	
Lack of patient awareness	66.67%	26
Lack of community resources	35.90%	14
Inefficient screening methods	48.72%	19
Stigma	15.38%	6
Denial	71.79%	28
Reluctance to communicate with healthcare professionals	46.15%	18
Other (please specify)	12.82%	5
Total Respondents: 39		

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Limitations

- The prevalence is based on Medicare beneficiaries only.

- Some individuals with incidence of AD may not be eligible for Medicare.

- Prevalence based on the sensitivity of the diagnostic instrument (Bradford et al. 2009).

- Self-reported survey instrument.

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Conclusion

- **Rural Northeast Tennessee** counties and the **Northeast Tennessee region** are at increased odds of the prevalence of AD.

- **Experts and professionals'** observations corroborate our findings that there are more cases of AD in the region compared to the last five years.

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- Centers for Medicare and Medicaid Services, https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Geographic-Variation/GV_PUF.html

- The First TN Area Agency on Aging and Disability (Net-Vac), https://www.ftaaad.org/net-vac/

- ETSU IRB, https://www.etsu.edu/irb/

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